

REMARKS/ARGUMENTS

Claims 1, 4-7, 10-12, 15-17 and 19-33 are pending in this application and presented for examination. Claims 1, 4, 7, 10-12, 15-17 and 19, and 25 have been amended. Claims 2-3, 8-9, 13-14 and 18 have been canceled without prejudice or disclaimer. No new matter has been introduced with the foregoing amendments. Reconsideration is respectfully requested.

I. FORMALITIES

Claims 1, 4, 7, 10-12, 15-17 and 19-25 have been amended. Independent claims 1, 19 and 25 have been amended to recite the chemical structures of original claims 9 and 14. In view of certain canceled claims, the dependencies of claims 4, 7, 10-12 and 15-17 have been updated. As no new matter has been introduced, Applicants respectfully request that the amendments be entered.

II. THE INVENTION

The present invention provides novel functional finishing dyes comprising at least one functional finishing group covalently attached to a traditional dye via a chemical linkage (*see*, Figure 1). More particularly, the present invention provides novel antimicrobial cationic dyes comprising a quaternary ammonium salt (QAS) group covalently attached to an aminoanthraquinoid dye via a linker. The dyes are particularly useful for imparting a functional property to a polymer, such as an antimicrobial, anti-static, softening, water-repellent, fire-resistant, soil-repellent, anti-UV, or anti-chemical property, and for simultaneously dyeing and finishing a polymer.

III. FIRST REJECTION UNDER 35 U.S.C. § 102(b)

Claims 1, 2, 7 and 8 were rejected under 35 U.S.C. § 102(b) as allegedly anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as allegedly being obvious over

U.S. Patent No. 5,891,200 ("*Lim et al.*"). To the extent the rejection is applicable to the amended set of claims, Applicants respectfully traverse the rejection.

Under MPEP § 2131:

[a] claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987).

Lim et al. teach an alkylene linker (column 8, line 55, formula I) between the anthraquinone and the quaternary ammonium moiety. *Lim et al.* do not teach an anthraquinone scaffold with a quaternary ammonium moiety appended to the anthraquinone via a linker having a methylene group interrupted with a heteroatom, or an amide group as is currently claimed. In order to anticipate the claims, each and every limitation must be found in the reference. Accordingly, Applicants respectfully request that the Examiner withdraw the rejection.

Further, *Lim et al.* in no way make the instant invention obvious. Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988); *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). As the current structure is not taught or suggested by *Lim et al.*, the reference does not make the instant invention obvious. Accordingly, Applicants request that the Examiner withdraw the rejection.

IV. SECOND REJECTION UNDER 35 U.S.C. § 102(b)

Claims 1-5, 7, 8, 19-22 and 25-31, as well as claim 6 in a separate rejection, were rejected as allegedly anticipated by, or in the alternative, allegedly obvious over U.S. Patent No. 3,546,258 ("*Kalopissis et al.* '258"). To the extent the rejection is applicable to the amended set of claims, Applicants respectfully traverse the rejection.

Kalopissis *et al.* '258 teach an anthraquinone having a "Z" group attaching an –NH group of the anthraquinone scaffold to a quaternary ammonium group. Z is defined as a phenylene group.

Kalopissis *et al.* '258 do not teach or suggest an anthraquinone scaffold with a quaternary ammonium moiety appended to the anthraquinone via a linker having a methylene group interrupted with a heteroatom, or an amide group as is presently taught and claimed. As each and every limitation is not found in the reference, Applicants respectfully request that the Examiner withdraw the rejection.

Moreover, as obviousness can only be established by combining or modifying the teachings of the cited art to produce the claimed invention where there is some teaching, suggestion, or motivation, the reference does not make the instant invention obvious. Kalopissis *et al.* '258 simply do not teach or suggest an anthraquinone scaffold as is currently claimed. Accordingly, Applicants request that the Examiner withdraw the rejection.

V. THIRD REJECTION UNDER 35 U.S.C. § 102(b)

Claims 1-5, 7-10, 12, 13, 19-22 and 25-31 are rejected as allegedly anticipated by or, in the alternative, as allegedly obvious over U.S. Patent No. 3,442,599 ("Kalopissis *et al.* '599"). To the extent the rejection is applicable to the amended set of claims, Applicants respectfully traverse the rejection.

Kalopissis *et al.* '258 (above) is a continuation-in-part application of Kalopissis *et al.* '599. The disclosures are similar. Kalopissis *et al.* '599 teach an anthraquinone having a "Z" group attaching an –NH group of the anthraquinone scaffold to a quaternary ammonium group. In this instance, Z is a phenylene group, or an alkylene group. Kalopissis *et al.* '599 do not teach or suggest an anthraquinone scaffold with a quaternary ammonium moiety appended to the anthraquinone via a linker having a methylene group interrupted with a heteroatom, or an amide group as presently taught and claimed. Accordingly, Applicants respectfully request that the Examiner withdraw the rejection.

Moreover, as obviousness can only be established by combining or modifying the teachings of the cited art to produce the claimed invention where there is some teaching, suggestion, or motivation, the reference does not make the instant invention obvious. Kalopissis *et al.* '599 simply do not teach or suggest an anthraquinone scaffold as is currently claimed. Accordingly, Applicants request that the Examiner withdraw the rejection.

VI. FIRST REJECTION UNDER 35 U.S.C. § 103(a)

Claims 1-13, 19-22 and 25-31 are further rejected as allegedly being obvious over Kalopissis *et al.* '599. To the extent the rejection is applicable to the amended set of claims, Applicants respectfully traverse the rejection.

Kalopissis *et al.* '599 teach an anthraquinone having a "Z" group attaching an –NH group of the anthraquinone scaffold to a quaternary ammonium group. Again, Z is a phenylene group, or an alkylene group. Kalopissis *et al.* '599 do not teach or suggest an anthraquinone scaffold with a quaternary ammonium moiety appended to the anthraquinone via a linker having a methylene group interrupted with a heteroatom, or an amide group as presently taught and claimed. As obviousness can only be established by combining or modifying the teachings of the cited art to produce the claimed invention where there is some teaching, suggestion, or motivation, the reference does not make the instant invention obvious. Accordingly, Applicants request that the Examiner withdraw the rejection.

VII. SECOND REJECTION UNDER 35 U.S.C. § 103(a)

In addition, claims 1-22 and 25-31 are rejected as allegedly being obvious over Kalopissis *et al.* ('599) in view of U.S. Patent No. 3,531,502 ("Kalopissis *et al.* '502"), U.S. Patent No. 2,494,240 ("Gutswiller"), and U.S. Patent No. 2,372,663 ("Dickey *et al.*").

Kalopissis *et al.* '599 has been discussed.

Kalopissis *et al.* '502 teach an amino phenylene linker. Kalopissis *et al.* '502 do not teach or suggest a linker having a methylene group interrupted with a heteroatom, or an amide group as is presently taught and claimed.

Gutzwiller does not teach or suggest an anthraquinone scaffold with a quaternary ammonium moiety appended to the anthraquinone via a linker having an amide group as is presently taught and claimed.

Dickey *et al.* do not teach or suggest an anthraquinone scaffold with a quaternary ammonium moiety appended to the anthraquinone via a linker having an amide group as is presently taught and claimed.

As obviousness can only be established by combining or modifying the teachings of the cited art to produce the claimed invention where there is some teaching, suggestion, or motivation, the reference does not make the instant invention obvious. Accordingly, Applicants request that the Examiner withdraw the rejection.

VIII. THIRD REJECTION UNDER 35 U.S.C. § 103(a)

Claims 1-13 and 19-33 are rejected as allegedly being obvious over Kalopissis *et al.*, ('599) in view of U.S. Patent No. 3,631,041 ("Heslop"), U.S. Patent No. 3,616,473 ("Leach"), U.S. Patent No. 2,918,344 ("Jenny") and U.S. Patent No. 2,890,094 ("Tucker"). To the extent the rejection is applicable to the amended set of claims, Applicants respectfully traverse the rejection.

Kalopissis *et al.* '599 has been discussed.

Heslop teach an anthraquinone with a cyclohexyl group appended to the anthraquinone. There is no teaching or suggestion of an anthraquinone scaffold having a linker comprising an amide group as is presently taught and claimed.

Leach do not teach or suggest anthraquinone compounds.

Jenny do not teach or suggest the use of quaternary ammonium moieties.

As obviousness can only be established by combining or modifying the teachings of the cited art to produce the claimed invention where there is some teaching, suggestion, or motivation, the reference does not make the instant invention obvious. Accordingly, Applicants request that the Examiner withdraw the rejection.

Appl. No. 10/804,354
Amdt. dated June 18, 2007
Reply to Office Action of January 17, 2007

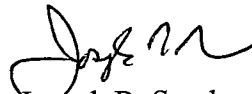
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CONCLUSION

In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 925-472-5000.

Respectfully submitted,


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